Draft Summary of the Environmental Work Group Meeting
Oroville Facilities Relicensing (FERC Project No. 2100)
September 29, 2004

The Department of Water Resources (DWR) hosted a meeting for the Environmental Work Group (EWG) on September 29, 2004 in Oroville.

A summary of the discussion, decisions made, and action items is provided below. This summary is not intended to be a transcript, analysis of the meeting, or to indicate agreement or disagreement with any of the items summarized, except where expressly stated. The intent is to present a summary for interested parties who could not attend the meeting. The following are attachments to this summary:

Attachment 1	Meeting Agenda
Attachment 2	Meeting Attendees
Attachment 3	Draft Final Report, SP-W1, Project Effects on Water Quality Designated Beneficial Uses for Surface Waters
Attachment 4	Presentation on SP-W1
Attachment 5	Summary Tables from SP-W1
Attachment 6	Outline for SP-F1 Presentation
Attachment 7	CSBP Metrics Used to Describe BMI Community Structure
Attachment 8	Draft Final Report, SP-F1, Tasks 1 & 2, The Evaluation of Project Effects on Non-Fish Aquatic Resources
Attachment 9	2003 Feather River Early Returns
Attachment 10	Presentation on a Water Treatment System for the FRH
Attachment 11	Draft SP-G2, Effects of Project Operations on Geomorphic Processes Downstream of Oroville Dam, Task 3 – Channel Cross-Sections and Photography and Task 4 – Monitoring
Attachment 12	Presentation on SP-G2
Attachment 13	SP-F5/7 Task 2 Report: Achievement of Current Stocking Goals
Attachment 14	Presentation on SP-F5/7, Task 2
Attachment 15	EWG-61: Enhance Riparian Vegetation Within the Oroville Wildlife Area
Attachment 16	EWG-66: Riparian Habitat Enhancement in the High Flow Channel of the Feather River
Attachment 17	EWG-67: Enhance/Restore Native Riparian/Wetland Vegetation Around the Thermalito Afterbay
Attachment 18	EWG-62: Enhance/Restore Native Plant Communities in the Lake Oroville Upland Areas
Attachment 19	EWG-82: Develop Protection and Avoidance Protocols for Sensitive Plant Populations in the Project Area
Attachment 20	EWG-84A: Construct New Feather River Hatchery Settling Ponds to Prevent Potential Leaching of Contaminants to the Feather River
Attachment 21	EWG-84B: Line Existing Feather River Hatchery Settling Ponds to Prevent Potential Leaching of Contaminants to the Feather River

I. Introduction

Attendees were welcomed to the EWG meeting. Attendees introduced themselves and their affiliations. The desired outcomes of the meeting were discussed as listed on the meeting agenda. The Facilitator noted that reports SP-F5/7, Task 3 and SP-F3.1, Task 4 would not be

presented because they are not completed. The reports will be forwarded to the EWG electronically as soon as they are available. The meeting agenda and list of meeting attendees are appended to this summary as Attachments 1 and 2, respectively.

II. Action Items – August 25, 2004 EWG Meeting

Ted Alvarez (DWR) reported that the August 25, 2004 EWG meeting summary will be posted on the relicensing web site soon. The Facilitator reviewed the status of the action item from the August EWG meeting as follows:

Action Item #E137:	Provide copy of matrix to Mike Meinz (CDFG).
Status:	Mike Manwaring (MWH) reported that he has provided the matrix to Mike Meinz.

III. Modeling Update

No modeling update was provided at this meeting.

IV. Resource Action Discussion

Task Force Meeting Updates and Next Meetings

Hatchery Task Force: Brad Cavallo (DWR) reported that the Hatchery Task Force had been working on the SP-F9 study report that would be discussed later in the meeting (see discussion below).

Flow/Temperature Task Force: Terry Mills (DWR) reported that the Flow/Temperature Task Force had not met since the last EWG meeting and there were no plans for the task force to reconvene at this time.

V. Study Deliverables and Implementation Updates

Reports

SP-W1

Jerry Boles (DWR), Ryan Martin (DWR), Scott McReynolds (DWR) and Tom Boullion (DWR) distributed Draft Final Report SP-W1, Project Effects on Water Quality Designated Beneficial Uses for Surface Waters (Attachment 3) and provided a presentation (Attachment 4). Jerry explained that the study evaluated the potential effects of Project operations on parameters for which objectives are included in the Basin Plan. The EWG discussed the sampling methodology and sampling locations both upstream and downstream of Oroville Dam used during the two-year study. Parameters monitored included bacteria, biostimulatory substances, chemical constituents, color, dissolved oxygen, floating material, oil and grease, pH, pesticides, salinity, sediment, settleable and suspended material, taste and odors, water temperature, toxicity, and turbidity. Jerry reported that water quality in the Project area is generally good. Nutrients and minerals in Lake Oroville were found at levels consistent with existing and proposed criteria, except for total phosphorus, which were occasionally at levels exceeding concentrations in the upstream tributaries and recommended water quality criteria. Jerry noted that metals exceeding various criteria in the reservoir included arsenic, aluminum, copper, iron, manganese, and lead however, these and other metals are contributed to the reservoir in concentrations exceeding various criteria by the upper tributaries.

Both total and fecal coliform bacteria were found at all water quality monitoring sites, but only fecal coliform bacteria exceeded criteria. In addition to human contact with water, high wildlife use of the swim areas could contribute bacterial contamination. The EWG discussed potential affects of flood flows on water quality and macroinvertebrates in the Feather River. Bob Baiocchi (Baiocchi family) suggested DWR review recent work done by Garcia and Associates

on high flow effects on the macroinvertebrate populations upstream of Lake Oroville in the North Fork Feather River.

Jerry Boles distributed and discussed summary tables extracted from the report (Attachment 5), which indicate where criteria were exceeded. For additional specific results from this study, please refer to the attached report and summary tables.

The EWG discussed water temperature criteria at Robinson Riffle. Bob Baiocchi disputed the established criteria as politically based and suggested that NOAA investigate the possibility of lowering the temperature target to benefit Chinook salmon. Jerry Boles noted that the downstream water temperatures generally comply with the Basin Plan in the Sacramento River. Jerry reviewed the beneficial uses described in the Basin Plan and identified when constituents might affect a particular beneficial use. Some constituents may affect contact and non-contact recreation and water temperature and chemical criteria exceedance, although rare, could affect warm and cold water fish migration and spawning. Eric Theiss (NOAA) requested additional references to support the statement contained in the report that additional carcasses placed in the upstream tributaries would not add beneficial nutrients to the system. The EWG discussed if nutrients are limited in this system. Mike Meinz (DFG) suggested that since the upper tributaries do not have thousands of fish to feed, you would expect it to appear as if nutrients are not a limiting factor. He questioned the validity of the sampling method that failed to pick up nutrient spikes that one would expect with large numbers of salmon spawning and decomposing downstream of Oroville Dam.

Eric Theiss asked for clarification of the report comment process. Terry Mills explained that the process was described by Rick Ramirez (DWR) during a Plenary Group meeting and involved a 30-day review period starting from report distribution date. Terry noted that DWR did not commit to revising the study documents and redistributing them, but rather would rely on errata sheets as necessary to correct factual errors contained in the reports. Eric requested that the meeting summary reflect NOAA's heartburn with the review process as described and is not agreeing to finalizing any of the study plan reports. Terry agreed to forward Rick Ramirez's letter explaining the comment process to Eric.

SP-F1

Phil Unger (MWH) distributed three handouts: Outline for SP-F1 Presentation; CSBP Metrics Used to Describe BMI Community Structure; and Draft Final Report, SP-F1, Tasks 1 & 2, The Evaluation of Project Effects on Non-Fish Aquatic Resources (Attachments 6, 7 and 8, respectively). He explained this study was designed to characterize the status and project effects on existing benthic macroinvertebrate (BMI) and plankton communities in the Oroville Project area. Phil pointed out that without historical data, estimating the influence of the Project on macroinvertebrate diversity in the Feather River is difficult. When comparing upstream population diversity to downstream values, armoring of substrates, altered temperature regimes, and fish stocking are believed to have contributed to less diversity downstream of the Project when compared to upstream communities. However, alterations to the upstream habitat prior to Project construction should also be considered to have had an impact on community diversity. Phil also noted that dampening of the natural hydrograph has limited flushing flows and provided more favorable conditions for colonization and expansion downstream. Water temperature increases in the Thermalito Afterbay and Lake Oroville likely increase plankton production in these waters, while fish stocking and habitat enhancement activities likely result in increased plankton predation by fish.

SP-F9

Randy Brown (DWR) discussed the progress in developing the study report for SP-F9, describing Project effects from Feather River Fish Hatchery (FRH) operations and reviewing the history of the FRH. He indicated the report would be available soon. He distributed a handout that included a series of graphs related to Feather River Salmon genetics and return rates (Attachment 9) and described activities undertaken at the hatchery to study genetics and return rates for hatchery fish. He indicated that the FRH was successful based on the 1967 criteria but noted that concerns had changed since that time, particularly with regards to the fitness of hatchery fish. He noted the complexities of the problem and the difficulty in teasing out the role of the FRH on Central Valley salmonids. The data are not sufficient to identify how many Feather River fish are from the hatchery but preliminary indications place the number near 50% with more found in the Low Flow Channel than in the High Flow Channel.

Randy discussed straying rates and indicated that rates had doubled recently with FRH tags recovered from every river sampled. He discussed the 1997 FRH IHN outbreak and indicated that it does not appear that the virus affected river spawners. Regarding steelhead, Randy indicated that 99% of hatchery returns are hatchery fish and discussed different return rates from various release points.

Randy indicated that the F9 report would include recommendations to collect more data, tag more fish, recover more tags and work with other hatcheries to help understand the complex role that hatcheries play in salmonid populations. He also suggested establishment of an interagency advisory team to coordinate hatchery efforts throughout the Central Valley. The EWG discussed the role of adaptive management in hatchery operations and the potential for the FRH to become a research facility.

Mike Manwaring (MWH) provided a presentation on a water treatment system for the FRH (Attachment 10). He described three options for a system to treat approximately 40 cfs to address disease concerns. The options include a UV only system with an estimated cost of $3.3 million, a UV plus an ozone system for $5.7 million and an ultra-filtration system that could cost over $25 million. The cost estimates include filtration but no employee costs or O&M. Anna Kastner (DFG) noted that the Coleman Hatchery employs two full-time technicians to operate their system. Eric Theiss questioned the cost estimates, which are considerably higher than his own research indicated. Mike Manwaring pointed out that Eric's estimates did not include construction needed to retrofit the existing facility or the provision of additional power infrastructure. Mike Meinz questioned if treating FRH water would simply transfer the IHN disease problem to Lake Oroville and subsequently downstream into the Feather River, where it would affect natural salmonid reproduction.

SP-G2, Tasks 3 and 4

Bruce Ross (DWR) provided Draft SP-G2, Effects of Project Operations on Geomorphic Processes Downstream of Oroville Dam, Task 3 – Channel Cross-Sections and Photography and Task 4 – Monitoring (Attachment 11) and provided a presentation (Attachment 12). He explained that the study was designed to identify and evaluate ongoing effects of altered downstream hydrology and sediment retention in Lake Oroville on channel morphology and sediment transport in the Lower Feather River. He added that results of this study would be used to identify ongoing channel changes and to develop a comprehensive sediment management plan to improve form and function in the Feather River. Bruce also provided CDs containing atlas sheets. Bruce noted that most channel incision occurred pre-project and results in the restriction of river meander and riparian succession. Floodplain connectivity also is affected. The EWG discussed how some of the effects could be mitigated if riparian easements could be acquired and allowed to erode, however such activities could also

eventually result in the de-watering of some side channels, thus affecting the habitat these channels provide.

SP-F5/7, Task 2
Eric See (DWR) provided SP-F5/7 Task 2 Report: Achievement of Current Stocking Goals (Attachment 13) and provided a presentation (Attachment 14). Eric explained that this task was designed to evaluate whether the current stocking goals for Lake Oroville and the Thermalito Forebay have been achieved. He reported that the current Lake Oroville stocking program goal is to annually stock approximately 170,000 coho salmon, using a 'put and grow' strategy. The program is meeting the established growth criteria and is regarded as highly successful by the angling community with high catch rates and salmon growth rates exceeding established goals.

The current Forebay stocking program consists of annually stocking approximately 30,000 catchable rainbow trout as part of a 'put and take' strategy. This program is also considered a success and consistent with the existing California recreational fishery management approach. The EWG discussed brown trout stocking that occurred in the past in Lake Oroville and Eric noted that those fish probably carried IHN but were not susceptible to the disease. Eric agreed to send Bob Baiocchi the stocking agreements between NOAA, DWR and DFG and the FERC order that describes the stocking program requirements. Eric Theiss indicated that NOAA had sent a letter to DWR commenting on the coho program and is awaiting the risk analysis due soon. Bill Foster (FWS) indicated they are also interested in receiving that analysis.

Narrative Reports
EWG-61
Gail Kuenster (DWR) described this Resource Action to enhance or create riparian vegetation along the Feather River and adjacent areas within the OWA (Attachment 15). This would require a hydrologic flow regime be developed to support natural regeneration of riparian vegetation and/or actively planting riparian trees and shrubs along shorelines, side channels, and other appropriate areas along the Feather River and in the OWA. She recommended that riparian enhancement measures should be considered for the OWA in concert with other resource actions that are designed to improve the functional riparian system. This Resource Action is a Category 2 action.

EWG-66
Gail Kuenster described this Resource Action to enhance or create riparian vegetation along the High Flow Channel of the Feather River (Attachment 16). This Resource Action is also recommended in combination with other actions designed to improve the functional riparian system and is classified as Category 2.

EWG-67
Gail Kuenster explained that EWG-67 would enhance riparian/wetland vegetation around the Thermalito Afterbay by planting appropriate plant species (Attachment 17). These native species plantings could restore areas where noxious species have been removed. This Resource Action could result in a more structural and species-diverse wetland margin that would benefit a number of resources including vegetation, fisheries and wildlife habitat. This Resource Action is a Category 2 action.

EWG-62
Gail Kuenster described this Resource Action to enhance or restore native plant communities in the Lake Oroville upland areas (Attachment 18). She explained that this Resource Action could

include biomass reduction to decrease fuel loading while increasing species richness. She suggested that disturbed areas should be identified and restored to native plant and wildlife habitats. In addition, non-native plantings could be removed and replanted with native species. EWG-62 is a Category 1 Resource Action.

EWG-82
Gail Kuenster explained that this Resource Action would develop protection and avoidance protocols for sensitive plant populations in the Project area (Attachment 19). The protocols would be designed to minimize impacts from facilities maintenance or development, noxious weed management, road maintenance and development, and recreation use, development and maintenance activities. Gail indicated that actions in place under the current license and/or under other resource actions will help to protect and enhance special status plant species and habitats in the Project area so no additional measures are recommended at this time. EWG-82 is a Category 1 Resource Action.

EWG-84A and B
These resource actions evaluate the potential to either line the existing FRH settling ponds to prevent leaching of effluent from hatchery operations through the gravel bottom of the ponds or to construct new ponds to eliminate the leaching (Attachments 20 and 21). The principal uncertainty of these measures is whether there is a need for such action. At present, there is no evidence that the hatchery effluent is harmful to the aquatic life in the river. It is also unclear what quantity of effluent would need to be treated. Scott McReynolds (DWR) noted that SP-W1 identified elevated salt loads and toxicity to test organisms after a hatchery treatment however, Anna Kastner disputed this finding and noted that no other hatcheries are required to treat their effluent. Although both of these resource actions are Category 1, no further evaluation is recommended.

VII. Next Steps

Terry Mills indicated that this is the final EWG meeting scheduled although the work group could meet again if necessary to assist the settlement process. He thanked everyone for their participation and indicated that the remaining reports would be distributed by e-mail and any comments should be directed to him.

Action Items
The following action items identified by the EWG include a description of the action, the participant responsible for the action, and due date.

Action Item #E138:	Provide reports SP-F5/7, Task 3, SP-F9, and SP-F3.1, Task 4 to the EWG as soon as available.
Responsible:	Terry Mills
Due Date:	When available.
Action Item #E139:	Provide Eric Theiss with Study Report Comment Process letter presented by Rick Ramirez to the Plenary Group.
Responsible:	Terry Mills
Due Date:	October 29, 2004
Action Item #E140:	Send Bob Baiocchi the stocking agreements between NOAA, DWR and DFG and the FERC order that describes the stocking program requirements.
Responsible:	Eric See
Due Date:	October 29, 2004